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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/134,147	08/14/1998	WALLACE T.Y. TANG	50169/110	7613
32588	7590	10/03/2003	EXAMINER	
APPLIED MATERIALS, INC. 2881 SCOTT BLVD. M/S 2061 SANTA CLARA, CA 95050			MACARTHUR, SYLVIA	
			ART UNIT	PAPER NUMBER
			1763	15
DATE MAILED: 10/03/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/134,147

Applicant(s)

TANG, WALLACE T.Y.

Examiner

Sylvia R MacArthur

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on the amendment sent 7/28/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 11-19 and 32-41 is/are pending in the application.
- 4a) Of the above claim(s) 36-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-19 and 32-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 August 1998 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Newly submitted claims 36-41 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: These claims are held to a method while the originally presented claims are held to an apparatus.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 36-41 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Terminal Disclaimer***

2. The terminal disclaimer filed on 7/28/2003 disclaiming the terminal portion of any patent granted on this application, which would extend beyond the expiration date of US Patent Application 09/909,766 has been reviewed and is accepted. The terminal disclaimer has been recorded.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 11-13, 15, 16, 18, 33, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Kazuhiro Ogawa (JP 57-138575).

Regarding claim 11: Ogawa teaches a (CMP apparatus) lapping machine 9 comprising a light source 27 transmitting light toward the substrate with the film to

Art Unit: 1763

illuminate at least one section of the film and reflects light off the illuminated section of the film at least one device (photosensor 28) to receive the reflected light from the film on the substrate

Regarding claims 12 and 34: Figure 1 illustrates that the photosensor is positioned on the same side of the substrate as the light source.

Regarding claims 13 and 18: The apparatus is operating so that the monitored section is minimized to remove signal problems. Note that this is a process limitation and is given no patentable weight.

Regarding claim 15: The light source of Ogawa is configured to illuminate more than one section of the wafer as the lapping device rotates the wafer.

Regarding claim 16: The photosensor of Ogawa receives reflected light and monitors the change in film thickness due to the lapping operation. See abstract.

Regarding claim 33: The abstract further cites that the light source is laser light.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 14, 17, 19, 32, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa in view of .

The teachings of Ogawa were discussed above.

Art Unit: 1763

Regarding claims 14, 19, and 35: Ogawa fails to teach illuminating only one section of the wafer.

Sarfaty teaches a film thickness control process using a fiber optical cable as the light conveying means between the light source and the substrate. Col. 7 lines 40-65 describe that Sarfaty measure the interferometric changes of a section of film over time.

The motivation to measure one section over time is that it provides a more accurate sample of the wafer without the need to accommodate for difference in geometry and topography along the entire wafer.

Thus it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to measure one section as a dedicated measurement area.

Regarding claim 17 and 32: Ogawa fails to teach a photodetector connected to an interferometer or spectrometer. Col. 4 lines 28-37 discusses the spectrometer 22 is connected to a linear silicon CCD array (photodetector).

The motivation for this connection is the spectrometer separates radiation wavelengths using the photodetector and the measurements can be made with respect to a particular wavelength.

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to modify the apparatus of Ogawa to provide a photodetector connected to a spectrometer as taught by Sarfaty.

***Response to Arguments***

Art Unit: 1763

7. Applicant's arguments with respect to claims 11-19 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R MacArthur whose telephone number is 703-306-5690. The examiner can normally be reached on M-F during the core hours of 8 a.m. and 2 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Application/Control Number: 09/134,147

Page 6

Art Unit: 1763

Sylvia R MacArthur  
Patent Examiner  
Art Unit 1763

  
October 1, 2003

  
GREGORY MILLS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700